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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/727,581

12/05/2003

Kevin Allan Dooley

2993-465US CMB/as

7326

32292

7590

12/29/2005

OGILVY RENAULT LLP (PWC)
1981 MCGILL COLLEGE AVENUE
SUITE 1600
MONTREAL, QC H3A 2Y3
CANADA

EXAMINER

AURORA, REENA

ART UNIT

PAPER NUMBER

2862

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,581

Applicant(s)

DOOLEY, KEVIN ALLAN

Examiner

Reena Aurora

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 10 and 18 - 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 10 and 18 - 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/13/05, 5/31/05, 11/05/04, 4/16/04, 12/15/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's election without traverse of invention I in the reply filed on 12/12/05 is acknowledged.

Applicant has canceled claims 11 – 17 added new claims 18 – 21.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 2, 6 – 9 and 18 - 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Campbell (1,226,149).

As to claim 1, Campbell discloses a rotary machine including a permanent magnet (28) supported by the shroud (14) and providing a permanent magnetic field, the magnetic field distributed across a space of sufficient size to extend to intersect said location; a magnetic variation detection unit (32) supported by the shroud and disposed adjacent the permanent magnet (28) at least partially within said space, the unit (32) adapted to provide a signal in response to a variation of said permanent magnetic field; and a processing unit (54) receiving said signal and providing the rotational speed (Note fig. 1 and 2, col. 1, lines 14 – 27 and col. 2, line 77 – col. 3, line 5).

As to claim 2, Campbell discloses a spacer (air) located between said permanent magnet (28) and said magnetic variation detection unit (32).

As to claims 6 and 7, Campbell discloses the at least one of said blades (12) includes substantially all of the plurality of said blades (fig. 1).

As to claim 8, Campbell discloses the apparatus is in a gas turbine engine, the bladed rotor (12) is the fan, and the apparatus provides fan speed information for use in operation of the gas turbine engine (col. 1, lines 11 - 27).

As to claim 9, Campbell discloses means for providing a magnetic field (28), the means mounted to a stationary portion of the engine; means for altering the magnetic field (12), the means associated with the at least one of the blades, the means adapted to pass through and alter the magnetic field as the at least one blade rotates with the rotor; means for detecting (32) an alteration in the magnetic field and generating a signal in response thereto, the alteration caused by the altering means; and a device adapted to use at least the signal to provide the rotational speed (54) (Note fig. 1 and 2, col. 1, lines 14 – 27 and col. 2, line 77 – col. 3, line 5).

As to claims 18 and 19, Campbell discloses at least a portion of the shroud forms part of the apparatus and wherein the at least a portion of the shroud comprises magnetic material (14, fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 – 5, 10 and 20 - 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell (1,226,149) in view of Nath et al. (6,707,297).

As to claims 3 – 5, Campbell fails to disclose that the magnetic variation detection unit comprises a Giant magneto resistance switch. Nath et al. (hereinafter Nath) discloses a method for in-situ eddy currents inspection of coated components in turbine engines wherein Nath clearly discloses that the magnetic field sensor can include a sense coil, Hall element or a giant magnetoresistive sensor. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use replace coil with a GMR to accurately detect the magnetic fields generated by eddy currents.

As to claims 10 and 20 - 21, Campbell discloses a gas turbine fan having a plurality of blades (12), the apparatus comprising at least one magnetic fan blade (12), the magnetic circuit including at least a permanent magnet (28) and an engine casing assembly, the magnetic circuit extending to a position intersected by the fan blade (12), the signal processor (54) adapted to produce rotation information based at least partially on an input received from the magnetic variation detection unit. Campbell fails to disclose a GMR switch the GMR switch positioned to detect a magnetic effect caused by the fan blade passing through the circuit and connected to the signal processor. Nath discloses a method for in-situ eddy currents inspection of coated components in turbine engines wherein Nath clearly discloses that the magnetic field sensor can include a sense coil, Hall element or a giant magnetoresistive sensor. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use

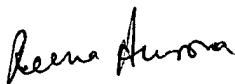
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replace coil with a GMR to accurately detect the magnetic fields generated by eddy currents.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 571-272-2263. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, E. Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Reena Aurora